

## Abstracts

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### Urgent Carotid Surgery and Stenting May Be Safe After Systemic Thrombolysis for Stroke

Koraen-Smith L, Tröeng T, Björck M, et al. *Stroke* 2014;45:776-80.

**Conclusions:** Urgent carotid endarterectomy or carotid artery stenting after thrombolysis for stroke may be safe without an increased risk of serious complications.

**Summary:** There is increasing evidence supporting the role of early carotid endarterectomy (CEA) for severe carotid stenosis in the emergent treatment of stroke. In addition, thrombolysis in hyperacute treatment of cerebrovascular ischemia has also gradually increased. Increasing use of thrombolysis to treat acute cerebral ischemia along with earlier surgery or stenting for ischemic stroke makes it likely that the number of patients who have received thrombolytic therapy and are considered for carotid bifurcation intervention, will increase. There is, however, little known about the results and safety of early CEA or carotid artery stenting (CAS) after thrombolytic therapy for acute cerebral ischemia. In this study the authors conducted a review of prospectively collected data in the Swedish National Registry for Vascular Surgery (Swedvasc) and the Swedish Stroke Registry (Riks-Stroke) from May 1, 2008 to December 11, 2012. The goal was to investigate the safety of urgently performed CEA or CAS in patients treated with thrombolysis for stroke. There were 3998 patients who underwent CEA or CAS for symptomatic carotid stenosis between May 2008 and December 2012. 79 of these patients (2%) had undergone previous thrombolysis for stroke. Retrospective review of this data and individual case records with regard to postoperative complications was performed. Variables analyzed included surgical-site bleeding, stroke, and death. Outcomes were compared to results of the patient cohort of 3919 patients undergoing carotid surgery or stenting during the study period without pre-procedure thrombolysis. Median time between thrombolysis and the carotid bifurcation procedure was 10 days. There were 71 patients who underwent carotid endarterectomy and 6 patients who underwent carotid artery stenting after thrombolysis for acute stroke. 30-day death and stroke rate for the thrombolysis cohort was 2.5% (2 or 79) and for the entire cohort it was 3.8% (139 of 3626;  $P = .55$ ). Postoperative bleeding rates were not significantly different between the groups (3.8% in the thrombolysis group vs 3.3% in the whole cohort;  $P = .79$ ). There was no correlation between time from lysis to surgery or stenting and complications at 30 days postoperatively.

**Comment:** In this series, urgent procedures for high-grade carotid artery stenosis did not appear to carry an increased risk of complications after thrombolysis for stroke. However, the median time between thrombolysis and the carotid procedure was 10 days and it is possible that earlier surgery could have an increased rate of complications. The timing of surgery following thrombolytic therapy for acute stroke must be balanced against the risk of further cerebral ischemic events. This study is by no means definitive as it is small and retrospective in design. It is based on a registry data collection with all those inherent limitations. However, there is nothing here to indicate that an urgent carotid procedure at least at a median of 10 days following thrombolysis for acute stroke is of increased risk compared to CEA or CAS for symptomatic carotid stenosis without preceding thrombolysis.

### Open Aortic Repair After Prior Thoracic Endovascular Aortic Repair

Roselli EE, Abdel-Halim M, Johnston DR, et al. *Ann Thorac Surg* 2014;97:750-7.

**Conclusions:** There are a variety of indications for conversion to open repair after thoracic endovascular stent grafting. The operations are complicated and the long term results are consistent with the chronic disease state of the patients.

**Summary:** Since the induction of thoracic endovascular stent grafting the technique has inevitably been applied to increasingly complex aortic pathology. In fact, it is now estimated that nearly two-thirds of thoracic aortic stent grafts are deployed outside the instructions for use, or "off-label". Inevitably it is to be expected that the use of this technique for increasingly complex aortic pathology is going to result in some late complications. Some of these late complications will require conversion to open repair. The objectives of this study were to: (1) characterize patients undergoing open thoracic aortic repair after prior TEVAR, (2) assess the indications for conversion and operative techniques used, and (3) assess late and early outcomes. The authors performed a chart review of their prospectively

collected database of patients undergoing thoracic endovascular arterial repair. They identified 50 patients who underwent a follow-up open aortic operation after prior TEVAR. The patients were also analyzed with the Social Security information for vital status. From July 2001 to January 2012 open arch ( $n = 25$ ), descending ( $n = 6$ ), thoracoabdominal ( $n = 17$ ), or extra-anatomic bypass ( $n = 2$ ) operations were performed after previous TEVAR. Median time from TEVAR to the open surgical procedure was 13.9 months with an interquartile range of 0.5 to 24 months. Indications for open operation included type endoleaks ( $n = 19$ ), retrograde aortic dissection ( $n = 9$ ), chronic aortic dissection with persistent false lumen growth ( $n = 16$ ), and graft infection ( $n = 6$ ). 60% of the patients had prior cardiovascular surgical procedures and 18% were done as emergencies. Circulatory support was required in 78% of the patients and hypothermic arrest techniques were used in 48%. Hospital mortality was 6% with no strokes and 1 myocardial infarction. 10% of patients ( $n = 5$ ) required tracheostomy and 1 required dialysis. Survival was 67% at a median follow-up of 2.9 years.

**Comment:** New procedures bring with them new complications. New complications will require innovative approaches. In this series the types of operations could be broadly classified as conversions to conventional repair and so-called reverse frozen elephant trunk, hybrid debranching procedures and extra-aortic bypass with subsequent stent graft removal and aortic oversew. Despite the author's excellent results with these highly complicated operations in difficult patients, with only 6% perioperative mortality, and no strokes or paraplegia, results are not likely generalizable to centers with less experience in the management of difficult thoracic aortic patients. Interestingly enough, like with open operations in the presence of abdominal aortic endografts, the stent graft itself can many times be preserved, at least partially, in these procedures. When sewing to the stent graft itself the authors advise including the adventitial layer of the aorta in the anastomosis, such that the previous stent graft is somewhat analogous to a new intimal layer.

### Ultrasonography Screening for Abdominal Aortic Aneurysms: A Systematic Evidence Review for the U.S. Preventive Services Task Force

Guirguis-Blake JM, Beil TL, Senger CA, et al. *Ann Intern Med* 2014;160:321-9.

**Conclusions:** A one-time invitation for abdominal aortic aneurysm (AAA) screening in men aged 65 years or older is associated with decreased AAA rupture and AAA-related mortality rates but has little or no effect on all-cause mortality.

**Summary:** Long-term follow-up and population-based randomized, controlled trials, have demonstrated that screening for AAAs  $\geq 3$  cm in diameter, decreases AAA related mortality rates in men aged 65 years or older. The U.S. Preventive Services Task Force (USPSTF) evaluates screening modalities for various diseases with respect to both benefits and harms. In 2005, the USPSTF found evidence to recommend 1-time screening for AAA by ultrasonography in men aged 65 to 75 years who had ever smoked. At that time, the USPSTF concluded benefits sustained did not clearly outweigh the harms and did not make a general recommendation for or against screening for AAA in men aged 65 to 75 years who had never smoked. They also recommended against routine screening for AAA in women (U.S. Preventive Services Task Force, *Ann Intern Med* 2005; 42:198-202). In the current paper the USPSTF have included newly identified literature and all trials from the previous review that met current inclusion criteria in an effort to provide updated evidence on the effectiveness of 1-time and repeated ultrasound screening for AAAs. Data sources included MEDLINE, the Database of Abstracts of Reviews of Effects, the Cochrane Central Register of Controlled Trials (Jan 2004-Jan 2013), clinical trial registries, references, experts, and a targeted search for population-based screening randomized clinical trials through September 2013. Studies were selected if they were in the English language, were population-based, of fair to good quality and randomized. Large cohort studies for AAA screening benefits as well as randomized clinical trials and cohort or registry studies for harms in adults with AAA were also included. Overall review of four RCTs involving 137,214 participants demonstrated that a 1-time invitation for AAA screening in men aged 65 years or older reduced AAA rupture and AAA-related mortality rates for 10 to 15 years, respectively. There was, however, no statistically significant effect of all-cause mortality